

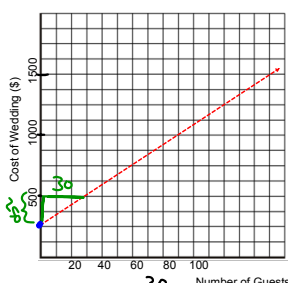
L6 - Modelling Linear Relations with Equations

Write the **equation** for each relationship in the space provided. Show any calculations you made. Indicate if the relation is a partial or direct variation and whether the line modelling the relationship is solid or dashed.

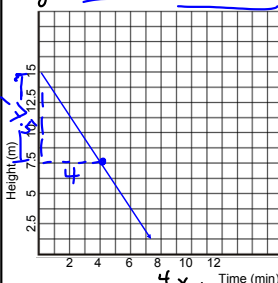
1) Finding the equation from a word problem

A coaches B	B coaches A
<p>A family meal deal at Chicken Deluxe costs \$26, plus \$1.50 for every extra piece of chicken added to the bucket.</p> <p>Equation: $C = 1.5x + 26$</p> <p style="text-align: center;"> ROC Initial cost </p> <p style="text-align: center;">slope</p>	<p>A race car travels at a constant speed of 220km/h.</p> <p>Equation: $D = 220h$ $y = 220x$</p>

2) Finding the equation from a graph



$y = \text{ROC} \cdot x + \text{initial value}$



Equation: _____

Equation: _____

Number of Athletes	Cost of Attending a Hockey Tournament
0	0
1	225
2	450
3	675

Number of Scoops	Cost of Ice Cream with Sugar Cone (\$)
0	1.25
1	2.00
2	2.75
3	3.50

$$y = R \cdot x + \text{initial}$$

$$\text{initial} = (0, -)$$

3) Finding the equation from a TOV (table of values)

Number of Athletes	Cost of Attending a Hockey Tournament
0	0
1	225
2	450
3	675

initial
R.O.C.

Equation: $C = \frac{225}{1}n + 0$

Number of Scoops	Cost of Ice Cream with Sugar Cone (\$)
0	1.25
1	2.00
2	2.75
3	3.50

initial

Equation: $C = 2n + 1.25$
 $y = 2x + 1.25$

Answer the following questions using your equations. Work together and be sure to show your work.

1. Use your equation from Chicken Deluxe.

Calculate the cost of a family meal that includes 8 extra pieces of chicken.

$$\begin{aligned} C &= 1.5x + 26 \\ &= 1.5(8) + 26 \\ &= 12 + 26 \\ &= 38 \end{aligned}$$

\therefore it will cost
\$38 for a bucket
+ 3 extra pieces

2. Use your equation from the cost of attending a hockey tournament.

Calculate the number of athletes who went to a tournament costing \$2475.

$$\begin{aligned} C &= 225n \\ 2475 &= 225n \\ \frac{2475}{225} &= \frac{225n}{225} \\ 11 &= n \\ n &= 11 \end{aligned}$$

\therefore 11 athletes went to the tournament

3. Use your equation from height vs time.

a) Calculate the height after 5min have passed.

b) Calculate the time needed to reach a height of 3.75m.

$$y = \frac{4}{-7.5}x + 15$$

$$h = \frac{4}{-7.5}t + 15$$

$$h = \frac{4}{-7.5}(5) + 15$$

$$h = 12.33$$

∴ the height will be 12.33m after 5 mins.

$$h = -\frac{4}{7.5}t + 15$$

$$3.75 = -0.53t + 15$$

$$-15 + 3.75 = -0.53t$$

$$\frac{-11.25}{-0.53} = \frac{-0.53t}{-0.53}$$

$$22.5 = t$$

$$t = 22.5$$

Assigned Work

p.233 # 1

p.234 # 4